

[54] **RECOVERING SULFUR FROM GAS STREAMS CONTAINING HYDROGEN SULFIDE**

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[56] **References Cited**

U.S. PATENT DOCUMENTS

3,798,316	3/1974	Beavon	423/574
3,879,521	4/1975	Anderson	423/242
3,896,215	7/1975	Bratzler et al.	423/574
3,911,093	10/1972	Sherif	423/574
3,914,387	10/1975	Von Jordan	423/242
3,962,405	6/1976	Annesser	423/242

FOREIGN PATENT DOCUMENTS

1,127,534 4/1962 Fed. Rep. of Germany 210/37 R

1,950,603 4/1971 Fed. Rep. of Germany 423/228

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[57]

ABSTRACT

Process for the recovery of sulfur from gas streams containing hydrogen sulfide comprising the steps of reacting a portion of the hydrogen sulfide with sulfur dioxide in a Claus reaction to form sulfur, removing the sulfur, incinerating the residual hydrogen sulfide in the resulting gas stream to sulfur dioxide, absorbing the sulfur dioxide in the incinerated gas stream in an aqueous absorbent solution, stripping the sulfur dioxide from the aqueous absorbent solution, recycling the stripped sulfur dioxide for reaction with succeeding portions of hydrogen sulfide in the incoming gas stream, re-contacting the stripped aqueous absorbent solution with succeeding portions of the incinerated gas stream to absorb additional sulfur dioxide, regenerating a portion of the aqueous absorbent solution to remove heat stable sulfur oxyanions therefrom by contacting said solution with an anion exchange resin and re-contacting the regenerated aqueous absorbent solution with said incinerated gas stream to absorb additional sulfur dioxide.

2 Claims, 2 Drawing Figures